

REMARKS

In the light of the interview on September 27, 2010, a supplemental amendment has been filed herewith.

In the amendment, claim 48 has been further amended to clarify the features of the invention. Also, new abstract of the disclosure has been filed.

In the interview, an article (Electrochemical Reactions in a DMFC under Open-Circuit by Q. Ye et al., electronically available on November 29, 2004) newly found by the applicant has been presented, wherein the article discloses the essential part of the invention. PTO-1449 is filed herewith. Although the article was available on November 29, 2004, the present application has priorities of March 31, 2004 and November 26, 2004.

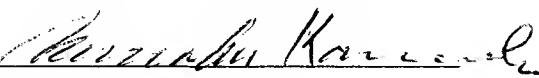
Also, submitted herewith is a copy of the article of Nihon Keizai Shimbun (News paper) published on November 8, 2005 in Japan and its translation wherein it is reported that GS Yuasa Corporation found a new hydrogen supply method.

Please consider the amendments and the facts surrounding the invention.

Please charge \$180.00 for filing PTO-1449 to Deposit Account No.11-0219. If any other fee is required, please charge to Deposit Account No. 11-0219.

Respectfully Submitted,

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Nihon Keizai Shimbun (November 8, 2005)

Hydrogen Production Method with Low Reaction Temperature

GS Yuasa Corporation

GS Yuasa Corporation announced on November 7 the discovery of a new hydrogen production method. If a fuel cell, which uses a reaction of methanol and air, is generated in a state wherein the supply of air is controlled to approximately one-tenth of the normal supply of air, it was confirmed that hydrogen was generated in an electrode.

The corporation is going to develop a compact hydrogen production device, which will be built into a notebook computer and the like, by applying the above-mentioned phenomenon in approximately two years from now.

The new hydrogen production method is characterized by a reaction temperature as low as 30 to 90 degrees Celsius, so that the device can be easily downsized compared to a conventional method which reacts with methane or water vapor at 150 degrees or above. With the methanol fuel cell with an electrode area of approximately 60 square centimeters, a maximum of eight cubic centimeters of hydrogen was generated per minute at the reaction temperature of 50 degrees.

The corporation is planning to combine a new hydrogen production device and a fuel cell using hydrogen as the fuel, and put that into practical use as the power source for mobile devices. The corporation aims at downsizing the overall power source starting such as a research for the electrode enhancing the hydrogen production efficiency with material manufacturers.

ジーエス・ユアサコー
ボレーションは七月、水素の新しい製造法を発見したと発表した。メタノールと空気の反応を利用する燃料電池を、空気の供給量を通常の十分の一程度に抑えた状態で発電させると電極に水素が発生することを確認した。同社はこの現象を応用しノートパソコンなどに組み込む小型の水素製造装置

反応温度低い 水素製造法

量と三年後をめどに開発する。
新たな水素製造法は反応温度がセ氏三千九十九度と低いのが特徴で、メタンや水素を五百五十度以上で反応させる従来法に比べ装置を小型化しやすい。電極面積が約六十平方センチメートル程度

携帯機器用電源に応用へ

料電池を使うと、反応温度五十度で一分間に最大八立方センチの水素が発生した。
同社は新たな水素製造装置と、水素を燃料とする燃料電池を組み合わせて携帯機器の電源として実用化する計画。素材メーカと水素の製造効率を高める電極の研究などを始め、電源全体の小型化を目指す。